



UNITED STATES PATENT AND TRADEMARK OFFICE

157

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,359	12/01/2003	Carlambrogio Bianchi	60246-306;10766	1318
26096	7590	04/11/2005	EXAMINER	
CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			DUONG, THO V	
			ART UNIT	PAPER NUMBER
			3743	

DATE MAILED: 04/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/725,359

Applicant(s)

BIANCHI ET AL.

Examiner

Tho v Duong

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,8-10 and 12-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,8-10 and 12-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/27/2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Receipt of applicant's amendment filed 1/27/2005 with a RCE is acknowledged. Claims 1-4,6,8-10 and 12-21 are now pending.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the claimed subject matter of "said at least one side opening is ductless" is not described in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matter of "the separation wall includes at least one opening" is not disclosed in the original disclosure.

Claims 6,8-10 and 12-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains,

Art Unit: 3743

or with which it is most nearly connected, to make and/or use the invention. Regarding claim 6, the claimed limitation that the fans moving unconditioned air toward the bent coil and the bent coil is disposed in a upstream direction from the fans, is not supported in the original disclosure and it is impossible for the bent coil being located in the upstream of the fan while the fans moves air toward the bent coil.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed subject matter that the duct includes at least one side opening and the side opening is ductless, renders the scope of the claimed indefinite since it is not clear whether applicant is claiming that the side opening is a hole, which is naturally ductless or the side opening is located outside of the duct or the side opening is not connected to any duct.

Claim 19 is further rejected as can be best understood by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4,6,8-10,12 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin, Sr. (US 5,284,027) in view of Sullivan (US 5,195,332). Martin discloses (figures 2,3,18 and column 6, line 51- column 7, line 30) a ducted heating and cooling

Art Unit: 3743

unit comprising at least one fan (12); a V-shaped bent coil (120) disposed in the downstream direction from the fan; the bent coil having a coil surface through which outlet air is discharged in a first direction and a second different direction (air exits at side openings 106); a duct (102,130) housing the fan and the bent coil; a separation wall (132) having an opening disposed between the fan and the bent coil for allowing air flowing toward the coil; the duct includes at least one side opening (106) substantially aligned with the second direction (arrow shown air exiting the duct). As regarding claim 2, the direction of air exiting outlet (108) at end of the duct is considered to be a first direction, which is longitudinal and the direction of air exiting outlet (108) at two side of the ducts is considered to be a second direction which is at an angle with respect to the first direction. As regarding the limitation of the vertical fins, Martin discloses (figures 3 and 13) a plurality of fins (104 or 444) formed in the bent coil to direct the outlet air substantially perpendicular to the coil surface and diverting the outlet air into different directions. Martin does not disclose that there are two fans blowing the air over the coils. Sullivan discloses (figure 1 and column 3, lines 57-68) a cooling system that has two fans (15) installed in the system for the purpose of increasing the quantity of unconditioned air flowing over a heat exchanger coil (12). Since Martin and Sullivan are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art, at the time the invention was made to use Sullivan's teaching in Martin's device for the purpose of increasing the quantity of unconditioned air flowing over a heat exchanger coil. Regarding claims 13 and 14, applicant has not disclosed that having the coil in C-shaped would solve any stated problem or is for any particular purpose that the V-shaped coil would have not. Moreover, it appears that the coil would perform equally well with the either the shape of coil is C or V shape (page 3,

Art Unit: 3743

paragraph 13, in the specification). Accordingly, the shape of the coils is deemed to be a design consideration, which fails to patentably distinguish over the prior art of Martin. Regarding, claim 19, Martin discloses that the side openings are holes (218) being cut out from the duct board for connecting conduits 216 to the enclosure. Therefore, the side opening (hole) is naturally ductless. Moreover, it appears that the heat exchanger would perform equally well with whether the side opening is “ductless” or “ducted”. Accordingly, the side opening is ducted or ductless is deemed to be a design consideration, which fails to patentably distinguish over the prior art of Martin because the ability of the coils to divide a main air stream into many different directions air streams is not affected by whether the side opening is ducted or ductless.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Sullivan as applied to claims 1 and 6 above, and further in view of Ikeya (US 5,482,115) or Nagakura (US 5,174,366). Martin and Sullivan substantially disclose all of applicant’s claimed invention as discussed above except of the limitation that the coil includes a plurality of tubes that are aligned vertically and staggered horizontally. Both Ikeya (figure 1) and Nagakura (figures 1-3) disclose a heat exchanger that has a coil including a plurality of tubes that are aligned vertically and staggered horizontally for the purpose of improving the heat exchanging performing of the heat exchanger. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use either one teaching of Ikeya or Nagakura in the combination device of Martin and Sullivan for the purpose of improving the heat exchanging performance of the heat exchanger.

Conclusion

Art Unit: 3743

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ishikawa et al. (US 4,909,319) discloses a heat exchanger having staggered rows of tubes.

N. Laing (US 3,313,342) discloses a plurality of blowers in the heat exchanger system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tho v Duong
Examiner
Art Unit 3743



TD
April 4, 2005